

## **Remarks**

Upon entry of the amendment, claims 1 to 10 are pending. Claims 2 to 6 have been rejected on indefiniteness grounds. Claims 1 to 6 have been rejected on anticipation grounds. In response claims 2 to 6 have been amended, arguments are provided against the anticipation rejection and new claims 7 to 10 presented that also emphasize differences from the cited art. Reconsideration and allowance are requested.

### 35 U.S.C. 112 2nd paragraph: Indefiniteness

As suggested by the Examiner, the term "characterized in that" has been changed to "wherein" for claims 2 to 6 to over this rejection. Reconsideration and allowance are requested.

### 35 U.S.C. 102: Novelty

The Examiner has cited a 1997 issued U.S. patent from the same inventors as alleged anticipating prior art. The 1997 patent (No. 5,607,839) reports on strain E-396 (FERM BP-4283). However, to anticipate, a reference must describe every element of a claim, either explicitly or inherently. The 5,607,839 patent does not describe a "microorganism culture precipitate" and thus does not anticipate. Reconsideration and removal of this rejection are requested for this reason.

Applicants further point out that the 5,607,839 patent does not describe removing moisture from a culture precipitate, but instead teaches the use of solvent extraction from cell/growth media, a very different process that yields different results. Thus, the patent does not anticipate because it does not describe a process that prepares cells for a feed additive. In contrast, the present application emphasizes that carotenoid within cells stores very well, which was discovered to be very helpful and important for use as a feed additive. The cited art lacks this necessary element.

Applicants further point out that the different procedures of the present invention give rise to highly desirable effects that solve a problem that was not even appreciated in the cited reference. Since the carotenoid existing in the pigment-containing substance for feed additives

of the present invention is stabilized by the action of the cell membrane, cell wall and the like of a microorganism, the pigment-containing substance for feed additives is resistant to oxygen, unlike that of the solvent extracted material in the cited reference. This discovery of a stabilization difference is a very important result of the claimed invention, which further is not shown in the cited art. Accordingly the cited reference provides no motivation for combination of the anticipation reference with another reference in an obviousness context as well. To emphasize this major method difference and product difference from the cited reference, applicants have added new claims 7 to 10. The new claims further point out the removal of moisture from the culture precipitate while leaving the carotenoid compound unextracted.

Applicants further point out that claims 3 to 6 recite "at least 98% homology with the nucleotide sequence as shown in SEQ ID NO:1." U.S. No. 5,607,839 additionally does not anticipate these claims because the patent does not include the "98%" claim element. The inventor discovered or realized that related strains measured this way (less than 2% different using the 16S rRNA sequence) yielded equally good pigment compositions. This claim element of claims 3-6, which corresponds to this discovery of the homology relationship is not found in the cited patent.

In view of the claim element differences between claims 1 to 6 and 7 to 10 from the cited reference reconsideration and allowance are requested.

CONCLUSION

In view of the claim amendments, new claims and arguments presented above, applicants believe that the pending claims are allowable and request reconsideration and allowance. If any issues can be handled by telephonic conversation the Examiner is cordially requested to contact applicants' representative Marvin Motsenbocker at 202-912-2195.

Respectfully submitted,

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**VERSION WITH MARKINGS TO SHOW CHANGES MADE**

2. (Amended) The pigment-containing substance for feed additives according to claim 1, [characterized in that] **wherein** at least 40 mass % of the carotenoid compounds is astaxanthin.

3. (Amended) The pigment-containing substance for feed additives according to claim 1, [characterized in that] **wherein** a DNA nucleotide sequence corresponding to 16S ribosomal RNA of the microorganism in the microorganism culture precipitate has at least 98% homology with the nucleotide sequence as shown in SEQ ID NO:1.

4. (Amended) The pigment-containing substance for feed additives according to claim 3, [characterized in that] **wherein** the microorganism in the microorganism culture precipitate is E-396 strain or a mutant thereof.

5. (Amended) The pigment-containing substance for feed additives according to claim 2, [characterized in that] **wherein** a DNA nucleotide sequence corresponding to 16S ribosomal RNA of the microorganism in the microorganism culture precipitate has at least 98% homology with the nucleotide sequence as shown in SEQ ID NO:1.

6. (Amended) The pigment-containing substance for feed additives according to claim 5, [characterized in that] **wherein** the microorganism in the microorganism culture precipitate is E-396 strain or a mutant thereof.